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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/930,026	08/14/2001	Preeti Lal	PF-0502-1 DIV	2308

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EXAMINER
MYERS, CARLA J

ART UNIT	PAPER NUMBER
1634	

DATE MAILED: 05/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/930,026	LAL ET AL.	
	Examiner	Art Unit	
	Carla Myers	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 March 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,9-28,45 and 46* is/are pending in the application.

4a) Of the above claim(s) *9-15 and 18-28* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 16* is/are rejected.

7)☒ Claim(s) *2,17,45 and 46* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

1. Applicant's election with traverse of Group I, claims 1, 2, 16, 17, 45 and 46 in the response of March 7, 2003 is acknowledged. The traversal is on the ground(s) that Applicants believe that the record has not established that undue burden would be required to search all of the inventions together. Applicants state that groups IV, XIV and XV have the same classification and therefore undue burden would not be required to examine these inventions along with all of the remaining inventions. This is not found persuasive because classification is only one means by which one can determine the extensiveness of the search and examination of each invention. Each of the listed inventions is drawn to a distinct invention as recognized by their divergent subject matter and requirement for different searches which are not co-extensive with one another. For example, a search of proteins as compared to a search of nucleic acids would require different sequence and database searches, including a search for proteins isolated from their natural sources and defined in terms other than their sequence, such as by their functional activity, molecular weight, or pI. Further, a search of proteins would not lead one to all references teaching methods of detecting nucleic acids, methods of screening for an agonist, agonists, antagonists, antibodies, methods of treatment with agonists or antagonists, methods of identifying compounds that bind a protein, methods of screening for compounds that modulate the activity of a ubiquitin protein, methods of screening for compounds that increase the expression of a ubiquitin nucleic acid or methods of assaying for the toxicity of a compound. Therefore, undue burden would be required to examine each of the claimed inventions. Applicants further state that the methods claims should be examined with the products of claims 1, 2, 16, 17,45 and 46 in view of the rules regarding

treatment of product and process claims. However, claims need only be rejoined upon the allowance of a product claim. Claim 1 from which the method claims depend is not allowable, as discussed below, and therefore there is no requirement to rejoin the method and product claims. Accordingly, the requirement is still deemed proper and is therefore made FINAL.

2. Claims 1 and 16 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are drawn to polypeptides comprising (a) the amino acid sequence of any one of SEQ ID NO: 1-2 (b) an amino acid sequence having at least 90% identity with any one of SEQ ID NO: 1-2; (c) a biologically active fragment or immunogenic fragment of a polypeptide having the amino acid sequence of any one of SEQ ID NO: 1-2. In view of the teachings in the specification, the broadest reasonable interpretation of the claims indicates that the claims are inclusive of allelic and mutant variants of the disclosed ubiquitin proteins. However, the specification teaches 3 distinct proteins having the amino acid sequence of SEQ ID NO: 1-3. The specification does not disclose and fully characterize any variants of these proteins, which have the same biological activity or a different biological activity. No proteins are exemplified which have 90%, 91% etc identity with SEQ ID NO: 1-2. Furthermore, the claims include biologically active fragments of SEQ ID NO: 1-2. The claims do not define the biological activity of the polypeptide and thereby encompass polypeptides having any biological activity. The specification

does not provide any guidance as to what fragments of SEQ ID NO: 1-2 have any particular biological activity. While the skilled artisan may identify fragments of SEQ ID NO: 1-2, the specification does not teach any fragments which have particular biological activities, e.g., ubiquitin activity. *Vas-Cath Inc. V. Mahurkar*, 19 USPQ2d 1111, clearly states that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention is, for purposes of the 'written description' inquiry, whatever is now claimed". Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 USC 112 is severable from its enablement provision. In *The Regents of the University of California v. Eli Lilly* (43 USPQ2d 1398-1412), the court held that a generic statement which defines a genus of nucleic acids by only their functional activity does not provide an adequate written description of the genus. The court indicated that while Applicants are not required to disclose every species encompassed by a genus, the description of a genus is achieved by the recitation of a representative number of DNA molecules, usually defined by a nucleotide sequence, falling within the scope of the claimed genus. At section B(1), the court states that "An adequate written description of a DNA...'requires a precise definition, such as by structure, formula, chemical name, or physical properties', not a mere wish or plan for obtaining the claimed chemical invention". In analyzing whether the written description requirement is met for a genus claim, it is first determined whether a representative number of specifies have been described by their complete structure. In the instant case, 3 members of the broadly claimed genus have been defined by their structure. No allelic variants or

mutants have been defined. It is then determined whether a representative number of species have been sufficiently described by other relevant identifying characteristics. In the instant case, no such identifying characteristics have been provided for any of allelic variants or mutant polypeptides. It is further noted that while the claims provide structural limitations for the encoded proteins, the claims do not define the functional properties of the encoded polypeptides. Again, Applicants have not provided any evidence that at the time of filing they were in possession of allelic variants of the proteins of SEQ ID NO: 1-2 wherein the allelic variants have biological activities distinct from the proteins of SEQ ID NO: 1-2. Therefore, Applicants have not provided sufficient evidence that they were in possession, at the time of filing, of the invention as it is broadly claimed and thus the written description requirement has not been satisfied for the claims as they are broadly written. Applicants attention is drawn to the Guidelines for the Examination of Patent Applications under 35 U.S.C. 112, ¶ 1 "Written Description" Requirement, Federal Register, Vol. 66, No. 4, pages 1099-1111, Friday January 5, 2001. 3. 3. 3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Korngold (WO 97/01350).

Korngold teaches a peptide (referred to therein as "core peptide #39) which consists of 6 amino acids identical to amino acids 216-221 of SEQ ID NO: 1 (see computer print out of the sequence alignment). Korngold (see, for example, page 24) also teaches pharmaceutical compositions containing said peptide. The peptide of Korngold is considered to meet the limitation of claims 1 and 16 of an immunogenic fragment and biologically active fragment of a polypeptide of SEQ ID NO: 1.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Sun (Biochimica Biophys Acta (March 1997) 1351: 231-238.

Sun et al teaches a ubiquitin-conjugating protein which is identical to amino acids 1-234 of present SEQ ID NO: 2. It is further noted that the claims as written include biologically active and immunological fragments of SEQ ID NO: 2 and polypeptides having 90% identity over any length of SEQ ID NO: 2. Thereby, the ubiquitin-conjugating protein of Sun meet the limitations of the claims.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was

made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hillier et al (GenBank Accession No. AA195176) in view of Draetta (U.S. Patent No. 5,744,343).

Hillier (GenBank Accession No. AA195176) teaches isolated nucleic acids which encode for a human ubiquitin-conjugating enzyme. The nucleic acids of Hillier share 98% identity with instant SEQ ID NO: 4 (i.e., the nucleic acid encoding the protein of SEQ ID NO: 1). Hillier does not specifically teach the protein encoded by this nucleic acid or compositions comprising the protein and a pharmaceutically acceptable excipient.

Draetta et al (see, for example, col. 16-17, 21-24) teaches cloning the nucleic acid encoding ubiquitin-conjugating enzymes into expression vectors, transforming host cells with the resulting vectors, culturing the host cell under conditions which allow for the expression of the polypeptide and recovering the expressed polypeptide.

In view of the disclosure of Draetta, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have cloned the isolated nucleic acids of Hillier into expression vectors, to transform host cells with these vectors and to have used the resulting host cells to synthesize ubiquitin proteins in order to have provided an effective means for synthesizing this ubiquitin-conjugating proteins which would have allowed for the further analysis of the functional activity of the encoded protein. It is noted that the resulting protein encoded by the nucleic acid of Hillier shares 100% identity with amino acids 33-181 of present SEQ ID NO: 1. It

is further noted that the claims as written include biologically active and immunological fragments of SEQ ID NO: 1 and polypeptides having 90% identity over any length of SEQ ID NO: 1. Thereby, the proteins encoded by the nucleic acids of Hillier meet the limitations of the claims. Further, with respect to claim 16, Draetta (for example columns 25-26) teaches compositions comprising ubiquitin-conjugating proteins and pharmaceutical carriers. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have diluted the ubiquitin-conjugating protein encoded by the nucleic acid of Hillier in a pharmaceutical carrier in order to have provided a composition useful for storage and for administration of the ubiquitin-conjugating protein. As stated in In re Rosicky, 125 USPQ 341 (CCPA 1960), a compound and a carrier are obvious, if it is obvious in the art to utilize a carrier with related compounds.

6. Claims 1 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sun in view of Draetta (U.S. Patent No. 5,744,343).

Sun et al teaches a ubiquitin-conjugating protein which is identical to amino acids 1-234 of present SEQ ID NO: 2. It is further noted that the claims as written include biologically active and immunological fragments of SEQ ID NO: 2 and polypeptides having 90% identity over any length of SEQ ID NO: 2. Thereby, the ubiquitin-conjugating protein of Sun meet the limitations of the claims. Sun does not specifically teach a composition comprising the protein and a "pharmaceutically acceptable excipient".

However, Draetta (for example columns 25-26) teaches compositions comprising ubiquitin-conjugating proteins and pharmaceutical carriers.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have diluted the ubiquitin-conjugating protein of Sun in a pharmaceutical carrier in order to have provided a composition useful for storage and for administration of the ubiquitin-conjugating protein. As stated in In re Rosicky, 125 USPQ 341 (CCPA 1960), a compound and a carrier are obvious, if it is obvious in the art to utilize a carrier with related compounds.

7. Claims 2, 17, 45 and 46 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carla Myers whose telephone number is (703) 308-2199. The examiner can normally be reached on Monday-Thursday from 6:30 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion, can be reached on (703)-308-1119. Papers related to this application may be faxed to Group 1634 via the PTO Fax Center using the fax number (703)-872-9306 or (703)-872-9307 (after final).

Any inquiry of a general nature or relating to the status of this application should be directed to the receptionist whose telephone number is (703) 308-0196.

Carla Myers
May 22, 2003

CARLA J. MYERS
PRIMARY EXAMINER